7. Mortgage

Program Name: Mortgage.java   **Input File: mortgage.dat**

Your parents want to buy a new house and are curious how much house they can afford. They want you to write a program that, given the house price, their down payment, the APR (annual percentage rate) and the number of months to pay off the loan, will output the monthly payment, expressed as whole dollar amounts.

The algorithm for finding a monthly payment is:

$$P = (H - D) * [(A/12) * (1 + (A/12))^N] / [(1 + (A/12))^N - 1]$$

where:
- P is the monthly payment
- H is the amount of the house price
- D is the down payment
- A is the APR as a double from 0 to 1
- N is the number of months for the loan

Input

The input file will contain an unknown number of lines, each of which will contain 4 values: the amount of the house price, the down payment, the APR as a value between 0 and 1, and the number of months for the loan. You should read in and process all values as doubles.

Output

For each line of input you will print a single line, starting with a $ followed by the monthly payment in whole dollar amounts with no decimal places, where any fractional dollar amount is treated as the next whole dollar, as shown below.

Example Input File
```
220230 20000 0.06 360
300000 15000 0.075 200
```

Example Output to Screen
```
$1201
$2501
```